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FIBER AND PROCESSING TESTS SURVEY OF LEADING COTTON VARIETIES

CROP OF 1993



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FIBER AND PROCESSING TESTS
SURVEY OF LEADING COTTON VARIETIES
1993 COTTON CROP

INTRODUCTION

This report contains information on the fiber properties and spinning performance of cotton samples representing leading varieties commercially grown in the United States. The results of fiber and spinning tests on these samples provide data for studies of the relationships between fiber properties, processing performance and product quality, in reference to specific cotton varieties.

SAMPLING PROCEDURES

For this survey, a total of twenty-four upland and two American Pima bales representing leading cotton varieties were purchased. In each case, the owner certified that the bale was produced from a specific variety.

Two upland varieties were selected from the Southeastern Area of the United States, four varieties from the South Central Area, three from the Southwestern Area and three from the Western Area. In addition, one American Pima variety was selected from the Western Area. Two bales were obtained for each of the thirteen selected varieties.

Several sets of samples were taken from each bale for various fiber tests. Each set was composed of five samples taken at random across the "fanhead" of the bale. This means that each fiber statistic in this report, except for classer's color grade and classer's leaf grade, is the average of five readings. The classer's color grade and classer's leaf grade were based on a classer's sample of the bale and were assigned at the classing office.

A minimum of 150 pounds of cotton from each bale was processed for each spinning test.

PROCESSING

The 26 bales of cotton collected for this study were processed on modern textile processing equipment. The cotton was opened, blended and cleaned on Truetzchler equipment and carded on a Truetzchler Card at 70 pounds per hour. Drawing sliver was produced on a Reiter Breaker Drawing Frame (3 over 3) and a Saco Lowell Finisher Drawing Frame (3 over 4). Roving was produced on a Saco Lowell Long Draft Roving Frame (10 x 5, 1-Apron Type), and ring spun yarn was produced on a Saco Lowell Long Draft Spinning Frame (2-Apron Type). Rotor spun yarn was produced on a Schlafhorst Autocoro Spinning Frame.

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NOTE: Trade names are used solely to provide specific information. Mention of a trade name does not constitute a warranty or an endorsement of the product by the U.S. Department of Agriculture to the exclusion of other products not mentioned.

ACKNOWLEDGEMENT: Appreciation is expressed to C. K. Bragg and personnel of the Cotton Quality Research Station, ARS, U.S. Dept. of Agriculture, Clemson, SC for processing the cotton into yarn.

Fiber and Processing Tests of Leading Cotton Varieties - 1993 Cotton Crop - Fiber Properties.

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	CARGILL PAYMASTER HS 26	CARGILL PAYMASTER HS 200	CARGILL PAYMASTER SOUTHWEST	CPCSD ACALA MAXXA	CPCSD ACALA ROYALE
CLASSIFICATION	Texas (Lamesa Area)	Texas (Lubbock Area)	SOUTHWEST (Abilene Area)	FAR WEST (Lubbock Area)	FAR WEST (Southern Area)
HVI - MCI					
Color Grade (code)	31	21	31	31	21
Leaf Grade (code)	2	3	4	2	3
HVI Staple (code)	33	32	35	36	37
UHM (in)	1.04	1.00	1.08	1.11	1.15
Uniformity Index (%)	80.6	81.1	81.3	82.9	83.1
Strength (g/tex)	30.5	30.2	28.6	31.9	32.1
Elongation (%)	8.5	9.5	7.5	8.8	8.8
Micronaire (rdg)	3.8	4.5	3.9	4.4	4.3
Trash (% area)	0.26	0.24	0.50	0.18	0.30
Color Rd (%)	75.8	77.2	73.3	78.1	77.0
Color +b (units)	8.7	9.1	9.3	8.7	8.8
STELOMETER					
1/8" - Gage Strength (g/tex)*	28.4	27.3	25.6	26.8	30.8
Elongation (%)	6.5	6.5	6.4	6.8	5.5
SUTER-WEBB LENGTH ARRAY					
UQL (in)	1.11	1.05	1.20	1.21	1.27
Mean Length (in)	0.87	0.84	0.96	1.00	1.05
CV (%)	35.2	33.4	32.2	29.6	28.6
Short Fiber Content (%)	13.6	13.8	10.2	8.8	7.2
IIC/SHIRLEY FMT					
Fineness (mtex)	150.8	177.2	138.2	172.4	152.2
Maturity Ratio	0.956	1.013	1.006	1.030	0.977
S. A. NON-LINT CONTENT					
Visible Waste (%)	1.9	1.7	2.2	1.2	2.1
Total Waste (%)	3.0	3.0	3.1	2.1	3.0
NEPS OF RAW COTTON					
AFIS-N (neps/gram)	218	191	240	158	133
Raw Stock Neps (neps/100 sq. in.)	29	17	29	23	21
SUGAR CONTENT (%)	0.31	0.31	0.25	0.45	0.33
				0.28	0.28
				0.39	0.39
					0.35

*Stelometer results adjusted to Pressley level.

		CARGILL PAYMASTER HS 200									
		SOUTHWEST Texas									
		(Lamesa Area)			(Lubbock Area)			(Abilene Area)			(Lubbock Area)
		10s	22s	30s	10s	22s	30s	10s	22s	30s	
OPENING & CARDING WASTE (%)	5.30	5.30	5.30	6.93	6.93	6.93	8.12	8.12	8.12	5.57	5.57
YARN SKEIN STRENGTH TEST:											
Yarn Number (Ne)	10.2	22.1	29.7	10.2	21.4	29.7	10.0	21.7	29.8	9.6	21.2
CV% of Yarn Number	1.3	1.3	2.0	1.8	0.9	1.0	1.2	2.0	1.9	1.5	1.8
Count-Strength-Product	2474	2130	1889	2352	1913	1645	2524	2200	2000	2274	1964
CV% of CSP	3.8	5.4	4.1	4.6	6.7	5.4	3.2	3.6	2.5	2.7	5.3
Elongation (%)	7.6	6.8	6.6	7.2	7.0	6.1	7.5	6.9	6.4	7.9	7.0
SINGLE-YARN STRENGTH TEST:											
Tenacity (mN/tex)	134	126	116	128	113	99	141	122	120	140	126
CV% of Tenacity	6.5	10.5	12.1	7.5	13.5	10.8	6.4	9.8	10.1	6.8	10.9
Force (N)	7.89	3.37	2.27	7.55	3.04	1.95	8.34	3.27	2.36	8.26	3.39
Elongation (%)	6.64	6.92	6.21	6.51	6.17	5.82	7.57	7.01	6.15	7.93	6.94
CV% of Elongation	8.8	7.0	11.5	10.3	15.1	10.4	7.5	13.6	9.0	8.3	8.7
Specific Work to Rupture (cm*N)	2.16	0.93	0.59	2.05	0.79	0.49	2.54	0.86	0.58	2.47	0.95
CV% of Specific Work to Rupture	10.8	14.7	17.6	12.2	19.9	16.0	11.0	15.5	14.3	10.8	15.6
USTER YARN EVENNESS TEST:											
Non-Uniformity (CV%)	13.1	14.1	16.4	13.9	14.6	16.4	12.3	13.8	16.4	12.4	14.3
Thick Places/1,000 yd	52	51	114	75	65	135	15	22	129	32	39
Thin Places/1,000 yd	2	9	101	0	22	140	0	9	55	0	19
Neps/1,000 yd	30	16	25	17	17	25	1	1	20	6	12
YARN APPEARANCE INDEX	90	110	120	70	90	110	110	110	90	110	110

CARGILL PAYMASTER HS 26										CARGILL PAYMASTER HS 200									
SOUTHWEST Texas										SOUTHWEST Texas									
(Lamesa Area)					(Lubbock Area)					(Abilene Area)					(Lubbock Area)				
22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	22s	36s	50s	22s	36s	50s	22s	36s	50s	
5.30	5.30	5.30	6.93	6.93	6.93	8.12	8.12	8.12	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57	
OPENING & CARDING WASTE (%)																			
YARN SKEIN STRENGTH TEST:																			
Yarn Number (Ne)	22.3	35.9	51.1	21.8	35.0	48.6	22.7	35.6	49.5	22.6	36.9	51.1	22.6	36.9	51.1	22.6	36.9	51.1	22.6
CV% of Yarn Number	1.6	1.3	1.9	1.7	1.7	1.9	2.5	1.1	1.5	2.5	1.6	1.9	2.5	1.6	1.9	2.5	1.6	1.9	2.5
Count-Strength-Product	2398	2154	1955	2377	2108	1752	2496	2344	2078	2452	2263	2105	2452	2263	2105	2452	2263	2105	2452
CV% of CSP	4.2	3.5	4.8	3.7	5.2	4.6	4.3	3.9	4.1	3.6	5.2	4.7	3.6	5.2	4.7	3.6	5.2	4.7	3.6
Elongation (%)	6.2	5.3	4.8	6.3	5.8	5.3	5.9	5.5	5.0	6.5	5.7	5.5	6.5	5.7	5.5	6.5	5.7	5.5	6.5
SINGLE-YARN STRENGTH TEST:																			
Tenacity (mN/tex)	161	133	127	153	136	128	156	143	138	149	138	130	149	138	130	149	138	130	149
CV% of Tenacity	12.4	14.2	15.6	11.5	13.2	16.9	12.7	13.3	15.3	9.6	11.5	13.6	9.6	11.5	13.6	9.6	11.5	13.6	9.6
Force (N)	4.32	2.18	1.50	4.11	2.23	1.51	4.20	2.35	1.63	3.99	2.26	1.53	3.99	2.26	1.53	3.99	2.26	1.53	3.99
Elongation (%)	6.56	5.29	5.29	6.76	5.85	5.43	6.28	5.53	5.21	6.84	6.00	5.93	6.84	6.00	5.93	6.84	6.00	5.93	6.84
CV% of Elongation	10.4	15.2	12.4	11.6	11.4	13.8	10.5	11.3	11.0	12.5	11.9	10.8	12.5	11.9	10.8	12.5	11.9	10.8	12.5
Specific Work to Rupture (cm*N)	1.13	0.53	0.35	1.10	0.55	0.35	1.02	0.56	0.37	1.09	0.57	0.38	1.09	0.57	0.38	1.09	0.57	0.38	1.09
CV% of Specific Work to Rupture	17.2	21.6	19.9	16.4	17.5	23.1	16.6	18.2	20.1	14.2	17.3	18.9	14.2	17.3	18.9	14.2	17.3	18.9	14.2
USTER YARN EVENNESS TEST:																			
Non-Uniformity (CV%)	20.0	24.8	27.3	21.9	24.6	27.7	20.9	24.8	27.2	18.5	22.7	24.4	18.5	22.7	24.4	18.5	22.7	24.4	18.5
Thick Places/1,000 yd	1018	2232	2915	1198	2185	3009	1232	2384	3031	704	1647	2169	704	1647	2169	704	1647	2169	704
Thin Places/1,000 yd	179	991	1608	323	933	1788	188	895	1364	91	550	816	91	550	816	91	550	816	91
Neps/1,000 yd	90	497	1041	184	519	1003	163	818	1337	194	530	815	194	530	815	194	530	815	194
YARN APPEARANCE INDEX																			
	100	80	70	100	80	70	90	80	60	90	80	70	90	80	70	90	80	70	90

CPCSD ACALA MAXXA		CPCSD ACALA ROYALE									
		FAR WEST					FAR WEST				
		San Joaquin Valley of California (Northern Area)		San Joaquin Valley of California (Southern Area)		San Joaquin Valley of California (Northern Area)*		San Joaquin Valley of California (Southern Area)		San Joaquin Valley of California (Northern Area)*	
OPENING & CARDING WASTE (%)		10s	22s	30s	10s	22s	30s	10s	22s	30s	10s
7.64		7.64	7.64	6.70	6.70	6.70	5.33	5.33	5.33	7.27	7.27
YARN SKEIN STRENGTH TEST:		9.4	21.3	28.5	9.9	21.5	28.9	9.8	21.5	28.7	9.9
Yarn Number (Ne)		2.8	1.7	2.0	1.9	1.6	2.4	1.2	1.8	2.4	1.7
CV% of Yarn Number		2893	2471	2265	2730	2252	2092	2753	2360	2190	2670
Count-Strength-Product		2.2	2.3	4.5	3.3	4.2	3.8	4.4	5.8	3.2	6.1
CV% of CSP		7.6	6.6	6.4	7.4	6.5	6.4	7.5	7.4	7.0	7.3
Elongation (%)											7.0
SINGLE-YARN STRENGTH TEST:		157	144	134	152	133	128	170	139	132	142
Tenacity (mN/tex)		7.3	8.6	12.8	8.6	12.0	10.8	7.9	8.7	11.0	8.6
CV% of Tenacity		9.27	3.86	2.64	8.99	3.58	2.52	10.86	3.74	2.59	8.37
Force (N)		7.71	6.31	5.78	7.04	6.13	5.91	7.20	6.63	6.26	6.35
Elongation (%)		10.9	8.9	10.4	8.5	8.2	9.1	7.9	6.9	7.7	7.6
CV% of Elongation		2.57	0.96	0.64	2.39	0.91	0.63	2.64	0.99	0.66	2.13
Specific Work to Rupture (cm*N)		11.9	12.1	17.1	12.6	15.2	15.2	12.2	12.4	14.8	12.1
CV% of Specific Work to Rupture											13.7
USTER YARN EVENNESS TEST:		11.8	13.7	17.1	12.7	14.4	17.1	12.7	13.9	15.9	12.6
Non-Uniformity (Cv%)		20	35	208	52	49	201	31	50	105	31
Thick Places/1,000 yd		0	8	85	0	7	100	0	9	47	0
Thin Places/1,000 yd		5	12	54	18	10	58	13	34	69	7
Neps/1,000 yd											14
YARN APPEARANCE INDEX		120	120	120	120	130	110	80	100	110	120
											110
											100

* Cotton stuck to processing rolls (roving frame).

		CPCSD ACALA MAXXA						CPCSD ACALA ROYALE					
		FAR WEST			San Joaquin Valley of California			FAR WEST			San Joaquin Valley of California		
		(Northern Area)		(Southern Area)				(Northern Area)*		(Southern Area)			
		22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s
OPENING & CARDING WASTE (%)	7.64	7.64	7.64	6.70	6.70	6.70	6.70	5.33	5.33	5.33	7.27	7.27	7.27
YARN SKEIN STRENGTH TEST:													
Yarn Number (Ne)	22.6	37.5	50.2	23.5	36.7	49.4	22.3	36.6	50.9	20.7	37.6	50.1	
CV% of Yarn Number	1.9	1.5	2.3	2.3	1.6	1.3	3.3	1.6	1.6	3.1	1.3	1.5	
Count-Strength-Product	3100	2966	2876	2922	2676	2666	2960	2785	2601	3020	2770	2675	
CV% of CSP	6.5	3.6	5.1	3.7	4.0	4.3	5.2	4.2	5.3	3.4	4.0	4.8	
Elongation (%)	6.0	5.7	5.5	5.7	5.2	5.0	6.3	5.6	5.0	6.5	5.5	5.3	
SINGLE-YARN STRENGTH TEST:													
Tenacity (mN/tex)	188	173	166	166	160	157	182	165	156	210	168	162	
CV% of Tenacity	10.8	11.7	14.9	12.6	11.8	13.4	11.1	14.6	11.9	10.2	13.5	14.4	
Force (N)	5.05	2.84	1.96	4.46	2.63	1.85	4.88	2.71	1.85	5.65	2.76	1.91	
Elongation (%)	6.26	5.46	5.02	6.22	5.05	5.28	6.43	5.64	5.41	7.15	5.62	5.65	
CV% of Elongation	9.8	11.2	14.0	7.9	12.2	9.1	9.7	11.3	11.2	8.8	11.8	10.9	
Specific Work to Rupture (cm*N)	1.22	0.63	0.42	1.07	0.57	0.43	1.20	0.62	0.42	1.46	0.64	0.44	
CV% of Specific Work to Rupture	14.6	16.3	19.4	15.1	17.0	18.0	15.0	19.2	16.3	14.8	18.5	19.4	
USTER YARN EVENNESS TEST:													
Non-Uniformity (CV%)	17.6	21.3	22.9	17.9	21.5	23.9	18.8	21.0	23.2	17.2	22.0	22.6	
Thick Places/1,000 yd	613	1388	1811	631	1487	1948	877	1388	1895	586	1554	1694	
Thin Places/1,000 yd	42	264	502	60	364	566	118	247	497	33	459	437	
Neps/1,000 yd	263	633	881	278	532	796	634	882	1135	332	734	852	
YARN APPEARANCE INDEX	110	90	70	110	90	70	100	70	60	100	100	70	

* Cotton stuck to processing rolls (roving frame).

Fiber and Processing Tests of Leading Cotton Varieties - 1993 Cotton Crop - Yarn Properties for Combed, RING SPUN YARN.

		CPCSD ACALA MAXXA						CPCSD ACALA ROYALE					
		FAR WEST			San Joaquin Valley of California (Northern Area)			San Joaquin Valley of California (Southern Area)			FAR WEST		
		22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s
OPENING & CARDING WASTE (%)	7.64	7.64	7.64	6.70	6.70	6.70	5.33	5.33	5.33	7.27	7.27	7.27	7.27
COMBING WASTE(%):	19.30	19.30	19.30	20.24	20.24	20.24	19.63	19.63	19.63	20.42	20.42	20.42	20.42
YARN SKEIN STRENGTH TEST:													
Yarn Number (Ne)	22.4	37.5	50.4	22.4	38.0	51.3	22.6	37.1	49.5	23.6	37.0	37.0	50.7
Cv% of Yarn Number	2.4	2.4	2.4	1.7	2.0	2.2	2.1	2.0	1.8	3.1	1.7	1.7	2.3
Count-Strength-Product	3539	3270	3110	3376	3051	2938	3354	3218	2934	3218	3116	3116	2972
Cv% of CSP	3.6	3.5	2.9	2.6	6.8	5.3	3.6	3.8	3.0	4.1	3.3	3.3	4.6
Elongation (%)	7.0	5.5	5.4	6.3	5.0	5.0	6.5	6.0	5.5	6.1	6.0	6.0	5.5
SINGLE-YARN STRENGTH TEST:													
Tenacity (mN/tex)	201	182	188	201	178	174	195	185	180	186	182	182	179
Cv% of Tenacity	10.0	10.3	13.2	9.4	9.4	14.5	8.7	11.4	12.1	14.6	11.0	11.0	13.0
Force (N)	5.40	2.99	2.22	5.40	2.93	2.05	5.24	3.03	2.12	4.99	2.99	2.99	2.12
Elongation (%)	6.63	5.73	5.54	6.33	5.25	5.19	6.66	6.38	5.80	6.63	6.02	6.02	5.46
Cv% of Elongation	7.7	7.7	10.2	11.4	12.2	17.1	9.3	9.8	11.0	11.0	10.6	10.6	13.4
Specific Work to Rupture (cm*N)	1.40	0.67	0.50	1.29	0.65	0.45	1.31	0.77	0.49	1.25	0.72	0.72	0.48
Cv% of Specific Work to Rupture	12.4	13.4	17.1	13.8	13.4	21.4	13.1	15.2	16.3	19.0	14.7	14.7	18.8
USTER YARN EVENNESS TEST:													
Non-Uniformity (Cv%)	13.0	16.2	17.1	13.4	16.2	17.2	12.8	15.7	16.7	13.7	15.9	15.9	16.6
Thick Places/1,000 yd	48	232	347	59	224	353	36	190	306	59	230	230	294
Thin Places/1,000 yd	3	65	110	4	56	108	6	39	73	25	73	73	70
Neps/1,000 yd	24	101	157	24	72	131	33	118	180	38	103	103	161
YARN APPEARANCE INDEX	130	120	110	130	120	110	130	120	120	130	110	110	100

* Cotton stuck to processing rolls (comber).

Fiber and Processing Tests of Leading Cotton Varieties - 1993 Cotton Crop - Fiber Properties.

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		DELTA PINE ACALA 90			DELTA PINE 20			DELTA PINE 50			
SOUTHEAST		MISSISSIPPI		SOUTH CENTRAL		MISSISSIPPI		SOUTH CENTRAL		SOUTHWEST	
CLASSIFICATION	Alabama	Georgia	Mississippi	Tennessee	Mississippi	Missouri	Missouri	(Corpus Area)	(Harlingen Area)	Texas	
HVI - MCI											
Color Grade (code)	31	41	31	31	31	41	41	31	31	3	1.13
Leaf Grade (code)	2	3	3	2	1	3	4	4	3	3	82.4
HVI Staple (code)	35	36	35	36	36	37	36	36	36	36	28.1
UHM (in)	1.09	1.12	1.08	1.12	1.12	1.14	1.12	1.12	1.12	1.12	8.3
Uniformity Index (%)	81.9	82.1	81.9	82.2	81.4	82.6	81.5	81.5	81.5	81.5	4.1
Strength (g/tex)	31.9	32.0	29.6	29.6	28.1	28.7	28.4	28.4	28.4	28.4	4.1
Elongation (%)	6.9	6.6	8.9	8.7	7.5	7.9	7.3	7.3	7.3	7.3	0.28
Micronaire (rdg)	4.5	4.6	3.9	4.1	4.4	4.5	4.4	4.4	4.4	4.4	0.28
Trash (% area)	0.36	0.28	0.32	0.38	0.08	0.42	0.48	0.48	0.48	0.48	0.28
Color Rd (%)	74.3	74.1	75.0	75.7	75.5	72.4	70.7	70.7	74.8	74.8	8.4
Color +b (units)	8.4	7.9	8.5	8.6	8.2	7.6	8.1	8.1	8.1	8.1	8.4
STELOMETER											
1/8" - Gage Strength (g/tex)*	27.3	26.0	25.5	23.5	24.2	23.1	24.2	24.2	24.2	24.2	24.4
Elongation (%)	5.9	5.4	6.8	6.8	6.2	6.6	5.7	6.6	6.6	6.6	6.4
SUTER-WEBB LENGTH ARRAY											
UQL (in)	1.14	1.21	1.18	1.20	1.23	1.28	1.22	1.22	1.22	1.22	1.24
Mean Length (in)	0.91	0.98	0.95	0.96	0.97	1.04	0.97	0.97	0.97	0.97	1.00
CV (%)	32.8	32.0	31.8	32.6	34.4	30.6	33.1	33.1	33.1	33.1	32.4
Short Fiber Content (%)	11.6	10.2	10.3	11.5	12.0	9.0	11.4	11.4	11.4	11.4	10.5
IIC/SHIRLEY FMT											
Fineness (mtex)	158.2	175.6	158.2	170.0	169.8	170.8	161.8	161.8	161.8	161.8	163.8
Maturity Ratio	1.127	1.089	0.956	0.956	1.037	1.054	1.068	1.068	1.068	1.068	0.983
S. A. NON-LINT CONTENT											
Visible Waste (%)	1.4	1.6	1.3	1.5	1.0	1.7	2.4	2.4	2.4	2.4	1.9
Total Waste (%)	2.5	2.6	2.3	2.6	1.8	2.5	3.5	3.5	3.5	3.5	2.8
NEPS OF RAW COTTON											
AFIS-N (neps/gram)	152	127	205	177	172	129	143	143	143	143	157
Raw Stock Neps (neps/100 sq. in.)	20	16	28	22	23	16	16	16	16	16	20
SUGAR CONTENT (%)											
	0.11	0.18	0.19	0.22	0.22	0.13	0.26	0.26	0.26	0.26	0.43

*Stelometer results adjusted to Pressley level.

		DELTAPINE ACALA 90						DELTAPINE 20								
		SOUTH EAST			Georgia			MISSISSIPPI			SOUTH CENTRAL			TENNESSEE		
	Alabama	10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	
OPENING & CARDING WASTE (%)	4.81	4.81	4.81		7.46	7.46	7.46	4.34	4.34	4.34	7.18	7.18	7.18			
YARN SKEIN STRENGTH TEST:																
Yarn Number (Ne)	9.4	20.7	29.2	9.8	20.9	30.0	9.8	20.7	29.5	9.7	21.0	28.3				
CV% of Yarn Number	0.9	2.2	2.3	3.6	2.4	2.3	1.1	2.0	2.4	3.1	1.7	2.5				
Count-Strength-Product	2289	1952	1704	2406	2129	1838	2277	1938	1726	2261	1913	1754				
CV% of CSP	3.9	3.7	3.3	4.7	4.2	4.1	4.6	3.7	3.4	2.6	4.8	3.2				
Elongation (%)	6.9	6.1	5.5	6.5	6.0	5.0	8.2	7.3	7.0	7.4	7.0	6.8				
SINGLE-YARN STRENGTH TEST:																
Tenacity (mN/tex)	138	116	113	141	129	110	133	118	104	133	120	116				
CV% of Tenacity	9.1	12.8	14.8	8.0	12.3	13.1	8.3	10.1	14.6	7.0	10.3	10.3				
Force (N)	8.18	3.10	2.23	8.33	3.47	2.16	7.83	3.17	2.04	7.83	3.23	2.29				
Elongation (%)	6.23	6.35	5.63	6.55	5.94	5.33	7.72	6.50	6.07	7.29	7.15	6.61				
CV% of Elongation	7.6	11.8	9.1	7.0	9.0	10.4	14.9	13.4	17.1	8.5	8.7	12.6				
Specific Work to Rupture (cm*N)	2.08	0.83	0.53	2.09	0.87	0.51	2.43	0.88	0.54	2.34	0.94	0.64				
CV% of Specific Work to Rupture	13.6	15.0	18.3	10.1	16.8	16.5	15.6	17.3	21.1	10.9	14.9	19.3				
USTER YARN EVENNESS TEST:																
Non-Uniformity (CV%)	13.4	15.3	18.4	12.6	15.8	17.4	13.4	14.7	17.2	12.6	14.0	17.0				
Thick Places/1,000 yd	41	80	253	36	147	213	87	72	204	56	46	169				
Thin Places/1,000 yd	0	21	161	0	19	184	0	9	135	0	11	136				
Neps/1,000 yd	4	11	39	2	41	41	54	22	47	37	15	32				
YARN APPEARANCE INDEX	110	100	120	80	110	110	90	110	100	110	110	100				

		DELTAPINE ACALA 90						DELTAPINE 20					
		SOUTH EAST			Georgia			MISSISSIPPI			SOUTH CENTRAL		
		22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s
OPENING & CARDING WASTE (%)	4.81	4.81	4.81	7.46	7.46	7.46	4.34	4.34	4.34	7.18	7.18	7.18	7.18
YARN SKEIN STRENGTH TEST:	22.2	35.5	50.5	22.4	35.5	48.5	21.7	36.3	48.7	21.9	35.8	35.8	50.7
Yarn Number (Ne)	0.8	1.3	2.0	1.4	1.1	1.8	1.4	2.7	1.6	1.7	1.7	1.7	1.8
CV% of Yarn Number	2287	2016	1745	2496	2242	2008	2289	2117	2013	2294	2100	2100	1911
Count-Strength-Product	5.3	4.4	5.0	3.3	3.8	4.7	5.8	4.5	5.6	3.6	4.7	4.7	5.9
CV% of CSP	5.4	5.0	4.5	5.5	5.1	4.7	6.5	5.8	5.7	6.5	5.6	5.6	5.0
Elongation (%)													
SINGLE-YARN STRENGTH TEST:	139	128	117	151	145	141	155	139	126	141	132	132	119
Tenacity (mN/tex)	12.3	14.1	15.2	14.2	10.9	15.4	9.6	11.2	14.3	10.2	13.8	13.8	16.2
CV% of Tenacity	3.72	2.09	1.38	4.05	2.38	1.66	4.16	2.29	1.49	3.80	2.16	2.16	1.41
Force (N)	5.16	4.65	4.19	6.24	5.43	5.11	6.83	6.33	6.04	7.02	6.00	6.00	5.52
Elongation (%)	13.9	14.3	14.9	10.5	9.8	12.4	15.3	12.0	11.9	11.0	12.7	12.7	13.7
CV% of Elongation	0.83	0.44	0.27	0.96	0.53	0.36	1.16	0.61	0.39	1.08	0.56	0.56	0.35
Specific Work to Rupture (cm*N)	18.8	20.0	22.1	19.3	14.9	20.8	17.4	17.2	20.0	16.3	20.2	20.2	22.7
CV% of Specific Work to Rupture													
USTER YARN EVENNESS TEST:	20.4	25.7	31.1	20.5	24.9	27.0	19.5	24.3	26.8	21.5	25.9	25.9	28.3
Non-Uniformity (CV%)	1157	2522	3743	1134	2381	2885	963	2143	2902	1495	2606	2606	3209
Thick Places/1,000 yd	202	1141	4178	216	1054	1357	153	788	1410	315	1170	1170	1858
Thin Places/1,000 yd	104	704	1657	123	621	1071	164	777	1251	305	928	928	1316
Neps/1,000 yd													
YARN APPEARANCE INDEX	110	100	70	110	80	70	80	90	70	90	80	80	60

DELTAPINE 50

		SOUTH CENTRAL						SOUTHWEST								
		Mississippi			Missouri			(Corpus Area)			Texas			(Hartlingen Area)		
		10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s
OPENING & CARDING WASTE (%)	6.99	6.99	6.99	6.68	6.68	6.68	6.68	6.70	6.70	6.70	6.70	6.70	6.70	7.35	7.35	7.35
YARN SKEIN STRENGTH TEST:																
Yarn Number (Ne)	9.9	22.0	29.4	9.5	21.8	29.3	9.8	21.4	29.6	9.8	21.9	29.9	9.8	21.9	29.9	29.9
CV% of Yarn Number	2.6	1.8	2.1	1.4	1.7	2.4	1.5	2.0	1.5	1.7	2.3	2.3	1.7	2.3	2.3	2.3
Count-Strength-Product	2286	1941	1734	2296	1951	1791	2231	1654	1508	2203	1850	1667	2203	1850	1667	1667
CV% of CSP	3.6	4.1	3.3	3.5	2.7	3.3	4.3	7.1	4.7	3.5	3.8	3.7	3.5	3.8	3.7	3.7
Elongation (%)	7.5	6.7	6.5	7.9	7.0	6.4	6.7	6.3	5.0	7.7	7.2	6.5	7.7	7.2	6.5	6.5
SINGLE-YARN STRENGTH TEST:																
Tenacity (mN/tex)	130	117	103	144	112	108	130	101	93	128	108	104	101	128	108	104
CV% of Tenacity	7.8	10.4	11.7	8.0	10.0	12.5	8.5	12.1	15.1	7.8	9.1	11.9	8.5	12.1	9.1	11.9
Force (N)	7.69	3.15	1.82	8.48	3.01	2.12	7.69	2.89	1.83	7.59	2.90	2.05	7.69	2.89	1.83	2.05
Elongation (%)	7.58	5.95	5.43	7.68	6.86	6.18	6.83	6.42	5.36	7.69	7.08	6.76	6.83	7.69	7.08	6.76
CV% of Elongation	11.8	13.9	11.8	8.5	11.0	10.5	8.8	10.8	11.5	7.8	7.7	12.0	10.8	11.5	7.7	12.0
Specific Work to Rupture (cm*N)	2.17	0.81	0.46	2.43	0.83	0.55	2.10	0.77	0.43	2.30	0.84	0.58	2.10	0.77	0.43	0.58
CV% of Specific Work to Rupture	12.4	16.7	20.6	12.4	15.4	18.6	12.2	15.8	20.0	13.7	13.9	18.1	12.2	15.8	13.7	18.1
USTER YARN EVENNESS TEST:																
Non-Uniformity (CV%)	13.1	14.8	16.9	12.4	14.1	16.6	12.7	15.5	17.4	13.1	14.4	17.2	12.7	15.5	17.4	17.2
Thick Places/1,000 yd	44	78	172	28	37	155	31	103	194	102	71	227	102	194	71	227
Thin Places/1,000 yd	0	19	138	0	15	92	1	45	198	2	24	151	2	45	24	151
Neps/1,000 yd	3	9	43	1	10	31	21	32	42	76	27	38	21	32	27	38
YARN APPEARANCE INDEX	90	110	100	110	110	110	90	120	110	90	110	110	90	110	110	110

DELTAPINE 50

	SOUTH CENTRAL										SOUTHWEST										
	Mississippi					Missouri					(Corpus Area)					Texas (Hartlingen Area)					
	22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	50s	22s	36s	
OPENING & CARDING WASTE (%)	6.99	6.99	6.99	6.68	6.68	6.68	6.70	6.70	6.70	7.35	7.35	7.35	7.35	7.35	7.35	7.35	7.35	7.35	50.2	50.2	
YARN SKEIN STRENGTH TEST:	22.6	35.5	50.2	22.6	36.1	48.3	22.1	36.6	50.5	22.8	35.7	50.2	22.6	35.7	50.2	22.8	35.7	50.2	1.5	1.5	1.5
Yarn Number (Ne)	1.5	1.5	1.9	1.2	1.6	1.8	1.3	1.4	2.3	1.4	1.1	1.1	1.4	1.1	1.1	1.4	1.1	1.1	1.9	1.9	1.9
CV% of Yarn Number	2290	2108	1845	2325	2115	1879	2351	2128	1914	2309	2119	1965	2309	2119	1965	2309	2119	1965	2309	2119	1965
Count-Strength-Product	4.4	4.5	6.1	4.3	4.5	3.8	2.9	4.1	4.4	3.2	3.8	3.8	4.4	3.2	3.8	3.2	3.8	3.8	3.8	3.8	3.8
CV% of CSP	5.9	5.5	5.0	6.0	5.7	5.4	5.8	5.0	4.9	6.6	6.2	5.6	6.6	6.2	5.6	6.6	6.2	5.6	5.6	5.6	5.6
SINGLE-YARN STRENGTH TEST:	139	136	120	137	129	120	144	132	122	137	138	124	137	138	124	137	138	124	12.3	12.3	12.3
Tenacity (mN/tex)	11.6	11.9	13.0	10.0	11.0	12.5	11.6	14.8	14.1	8.7	12.3	16.8	14.1	8.7	12.3	14.1	8.7	12.3	12.3	12.3	16.8
CV% of Tenacity	3.74	2.23	1.42	3.69	2.12	1.42	3.86	2.17	1.44	3.69	2.27	1.48	3.86	2.17	1.44	3.69	2.27	1.48	3.69	2.27	1.48
Force (N)	6.54	5.67	5.21	6.85	6.02	5.72	6.12	5.62	5.15	6.34	6.02	5.42	6.12	5.62	5.15	6.34	6.02	5.42	6.34	6.02	5.42
Elongation (%)	9.1	13.3	11.4	9.4	11.2	10.5	12.8	14.2	11.8	18.3	13.3	12.6	12.8	14.2	11.8	18.3	13.3	12.6	13.3	12.6	12.6
CV% of Elongation	0.95	0.53	0.33	0.99	0.53	0.35	0.95	0.52	0.33	0.99	0.59	0.36	0.95	0.52	0.33	0.99	0.59	0.36	0.99	0.59	0.36
Specific Work to Rupture (cm*N)	15.5	17.2	18.6	14.7	16.5	18.6	17.7	20.8	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
CV% of Specific Work to Rupture																			13.7	13.7	19.8
USTER YARN EVENNESS TEST:	20.9	25.9	28.0	19.8	23.5	26.2	19.6	23.2	26.6	20.0	23.4	25.0	20.6	23.2	26.6	20.0	23.4	25.0	1059	1965	2388
Non-Uniformity (CV%)	1355	2701	3197	1011	1996	2581	1006	1869	2724	1827	225	951	1827	1088	1088	225	702	951	223	783	1063
Thick Places/1,000 yd	235	1168	1753	203	634	1190	141	578	1827	1827	225	951	1827	1088	1088	225	702	951	223	783	1063
Thin Places/1,000 yd	173	888	1285	159	626	836	146	524	1088	1088	223	1063	1088	1088	1088	223	702	951	223	783	1063
YARN APPEARANCE INDEX	90	80	60	110	100	70	90	80	60	100	90	70	90	80	60	100	90	70	90	90	70

Fiber and Processing Tests of Leading Cotton Varieties - 1993 Cotton Crop - Fiber Properties.

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DELTAPINE 51			DELTAPINE 5415			STONEVILLE 453		
SOUTH CENTRAL		SOUTHEAST		FAR WEST		SOUTH CENTRAL		
Mississippi	Tennessee	South Carolina	Georgia	Arizona	California	Missouri		Tennessee
CLASSIFICATION								
Color Grade (code)	31	41	41	31	31	41	31	1.14
Leaf Grade (code)	2	2	4	2	2	3	4	82.2
HVI Staple (code)	36	36	36	37	37	35	37	30.3
HVI - MCI								
UHM (in)	1.11	1.13	1.13	1.11	1.15	1.15	1.09	1.14
Uniformity Index (%)	82.8	82.5	81.0	81.5	81.9	81.8	81.3	82.2
Strength (g/tex)	28.8	30.5	31.2	30.2	32.1	32.1	27.7	7.3
Elongation (%)	8.6	7.2	8.2	8.5	8.3	8.7	7.5	4.5
Micronaire (rdg)	4.6	4.7	4.1	4.7	4.3	4.3	4.2	0.36
Trash (% area)	0.30	0.38	0.30	0.40	0.12	0.20	0.40	74.8
Color Rd (%)	75.5	73.6	74.7	72.2	78.6	73.4	69.3	8.7
Color +b (units)	8.8	8.4	7.7	8.3	8.3	9.7	8.8	
STELOMETER								
1/8" - Gage Strength (g/tex)*	24.4	27.4	25.5	25.0	25.4	27.5	25.6	25.6
Elongation (%)	6.8	5.8	6.7	6.6	6.6	6.3	5.9	5.7
SUTER-WEBB LENGTH ARRAY								
UQL (in)	1.23	1.24	1.19	1.19	1.28	1.28	1.21	1.28
Mean Length (in)	1.01	0.97	0.93	0.92	1.01	1.02	0.97	1.04
CV (%)	30.2	34.2	36.0	36.7	35.0	33.6	32.5	31.2
Short Fiber Content (%)	8.8	12.0	13.8	14.6	12.0	11.4	11.0	8.8
IIC/SHIRLEY FMT								
Fineness (mtex)	189.6	179.6	166.0	194.0	172.2	179.4	162.8	179.2
Maturity Ratio	1.017	1.043	0.972	0.997	1.016	0.922	1.025	1.023
S. A. NON-LINT CONTENT								
Visible Waste (%)	1.0	2.3	1.9	1.6	1.0	1.8	1.5	1.7
Total Waste (%)	1.9	3.3	3.0	2.7	2.3	3.1	2.5	2.7
NEPS OF RAW COTTON								
AFIS-N (neps/gram)	153	127	195	162	179	181	195	165
Raw Stock Neps (neps/100 sq. in.)	16	16	19	20	27	26	23	24
SUGAR CONTENT (%)								
	0.20	0.16	0.12	0.15	0.28	0.82	0.14	0.18

*Stelometer results adjusted to Pressley level.

		DELTAPINE 51						STONEVILLE 453								
		SOUTH CENTRAL			Tennessee			MISSOURI			SOUTH CENTRAL			Tennessee		
		10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s
OPENING & CARDING WASTE (%)	6.50	6.50	6.50	7.77	7.77	7.77	4.73	4.73	4.73	7.12	7.12	7.12	7.12	7.12	7.12	
YARN SKEIN STRENGTH TEST:	9.8	20.7	28.1	9.6	21.0	29.7	9.8	22.2	29.9	9.7	21.0	29.0				
Yarn Number (Ne)	2.0	2.3	2.1	1.8	2.3	2.4	1.9	2.7	2.5	1.7	1.9	2.5				
CV% of Yarn Number	2251	1929	1680	2312	2038	1788	2190	1783	1607	2222	1861	1647				
Count-Strength-Product	3.8	3.8	3.3	2.5	3.7	4.6	2.7	4.5	4.5	3.4	3.9	5.7				
CV% of CSP																
Elongation (%)	7.9	7.4	6.0	6.7	6.5	6.0	6.8	6.4	6.3	6.6	6.4	6.1				
SINGLE-YARN STRENGTH TEST:	129	120	113	143	120	113	124	108	98	128	115	103				
Tenacity (mN/tex)	7.6	11.5	12.9	7.7	10.4	14.4	7.3	10.0	11.3	8.3	9.9	13.1				
CV% of Tenacity	7.60	3.22	2.22	8.47	3.23	2.23	7.34	2.91	1.92	7.54	3.08	2.02				
Force (N)	8.13	6.60	6.11	7.31	5.85	5.74	6.42	6.15	5.96	6.24	5.62	5.46				
Elongation (%)	10.5	10.9	14.6	6.7	10.4	11.9	10.3	12.6	10.6	8.4	10.8	11.7				
CV% of Elongation	2.34	0.90	0.61	2.38	0.84	0.55	1.93	0.76	0.49	1.97	0.76	0.49				
Specific Work to Rupture (cm*N)																
CV% of Specific Work to Rupture	13.3	16.8	18.9	12.3	15.4	20.0	12.6	16.4	12.6	13.0	15.2	19.4				
USTER YARN EVENNESS TEST:	13.3	14.7	17.8	12.6	14.7	16.9	13.2	15.2	17.5	13.3	15.3	17.3				
Non-Uniformity (CV%)	61	86	249	20	70	171	58	85	189	64	99	209				
Thick Places/1,000 yd	1	24	171	0	12	120	1	33	153	1	40	149				
Thin Places/1,000 yd	13	16	84	3	19	31	19	12	30	35	20	38				
YARN APPEARANCE INDEX	100	110	110	70	110	120	90	110	120	70	110	110				

STONEVILLE 453									
DELTAPINE 51									
	SOUTH CENTRAL				SOUTH CENTRAL				
	Mississippi				Tennessee				Tennessee
	22s	36s	50s	22s	36s	50s	22s	36s	50s
OPENING & CARDING WASTE (%)	6.50	6.50	6.50	7.77	7.77	7.77	4.73	4.73	4.73
YARN SKEIN STRENGTH TEST:									
Yarn Number (Ne)	23.0	36.4	49.5	22.5	36.2	49.6	22.3	36.3	51.0
CV% of Yarn Number	1.7	1.1	1.3	1.4	1.0	1.4	1.1	1.0	1.9
Count-Strength-Product	2257	2062	1941	2368	2147	1873	2196	1937	1752
CV% of CSP	5.0	4.7	4.1	3.6	5.0	4.1	3.0	4.5	7.1
Elongation (%)	6.6	5.8	5.5	6.0	5.4	5.0	5.6	5.2	4.8
SINGLE-YARN STRENGTH TEST:									
Tenacity (mN/tex)	136	125	124	140	130	120	141	126	108
CV% of Tenacity	11.8	11.8	14.0	9.9	15.0	18.6	11.2	15.2	18.8
Force (N)	3.66	2.05	1.46	3.76	2.13	1.42	3.78	2.06	1.28
Elongation (%)	6.37	5.56	5.41	5.80	5.39	4.83	6.29	5.47	4.73
CV% of Elongation	16.1	12.6	11.9	13.9	12.0	13.6	10.5	13.1	15.1
Specific Work to Rupture (cm*N)	0.95	0.50	0.35	0.99	0.49	0.31	0.97	0.48	0.28
CV% of Specific Work to Rupture	19.5	18.7	20.4	15.7	21.5	25.4	15.9	21.8	26.0
USTER YARN EVENNESS TEST:									
Non-Uniformity (CV%)	20.4	24.9	25.6	20.7	25.6	27.8	20.5	25.4	27.5
Thick Places/1,000 yd	1158	2358	2479	1289	2634	3186	1201	2526	2999
Thin Places/1,000 yd	239	1007	1176	203	1116	1522	225	1139	1600
Neps/1,000 yd	237	889	1114	217	1099	1274	234	877	1298
YARN APPEARANCE INDEX	110	90	70	100	80	60	100	80	60

DELTAPINE 5415

	DELTAPINE 5415											
	SOUTHEAST			Georgia			Arizona *			FAR WEST		
	South Carolina	22s	30s	10s	22s	30s	10s	22s	30s	10s	22s	30s
OPENING & CARDING WASTE (%)	7.04	7.04	7.04	7.97	7.97	7.97	7.99	7.99	7.99	7.62	7.62	7.62
YARN SKEIN STRENGTH TEST:												
Yarn Number (Ne)	9.7	21.3	29.8	9.7	21.1	29.3	9.7	21.5	29.0	9.7	21.0	28.7
CV% of Yarn Number	2.4	2.0	1.7	2.6	2.3	1.8	1.4	2.3	2.5	2.9	1.8	2.0
Count-Strength-Product	2393	2048	1813	2098	1769	1579	2213	1794	1630	2310	1917	1655
CV% of CSP	3.3	4.0	3.6	4.5	4.3	4.7	3.5	5.9	3.4	3.7	6.2	4.7
Elongation (%)	7.4	6.9	6.0	6.9	5.8	5.7	6.7	6.3	5.8	7.0	6.3	6.5
SINGLE-YARN STRENGTH TEST:												
Tenacity (mN/tex)	137	124	111	127	110	98	133	114	105	136	120	112
CV% of Tenacity	7.5	11.2	13.1	7.6	10.6	12.7	7.3	9.3	12.1	7.2	9.7	11.7
Force (N)	8.08	3.33	2.19	7.51	2.96	1.94	7.84	3.06	2.07	8.05	3.22	2.19
Elongation (%)	7.17	6.92	6.55	7.05	6.16	5.73	7.08	6.46	5.72	7.00	7.06	6.22
CV% of Elongation	8.8	8.3	9.9	17.4	10.2	14.2	9.1	11.6	10.7	8.2	7.9	11.0
Specific Work to Rupture (cm*N)	2.34	0.95	0.60	2.11	0.77	0.50	2.20	0.82	0.52	2.22	0.89	0.56
CV% of Specific Work to Rupture	12.6	15.7	17.7	15.5	16.4	20.6	12.4	15.5	17.6	11.7	14.0	17.4
USTER YARN EVENNESS TEST:												
Non-Uniformity (CV%)	12.4	14.1	17.1	13.8	15.0	17.5	12.8	14.5	16.6	12.3	15.6	15.9
Thick Places/1,000 yd	24	43	199	88	94	193	34	45	132	29	68	113
Thin Places/1,000 yd	0	10	131	0	26	142	1	11	119	0	30	76
Neps/1,000 yd	3	15	61	68	24	44	12	10	21	10	21	45
YARN APPEARANCE INDEX	90	110	100	110	90	120	90	130	100	100	110	110

* Cotton stuck to processing rolls (card and roving).

DELTA PINE 5415												
	SOUTHEAST					FAR WEST					California *	
	South Carolina		Georgia			Arizona *		36s 50s				
	22s	36s	50s	22s	36s	50s	22s	36s	50s	22s		
OPENING & CARDING WASTE (%)	7.04	7.04	7.04	7.97	7.97	7.97	7.99	7.99	7.99	7.62	7.62	
YARN SKEIN STRENGTH TEST:	22.2	35.4	49.7	22.9	36.1	50.2	22.1	36.8	50.2	22.2	35.5	
Yarn Number (Ne)	2.0	1.6	1.2	1.3	1.3	1.5	1.3	1.3	2.1	1.1	1.4	
CV% of Yarn Number	2252	2029	1809	2000	1820	1468	2206	2002	1762	2300	2024	
Count-Strength-Product	4.3	3.7	6.1	5.4	4.6	7.3	4.2	4.9	6.3	4.0	3.9	
CV% of CSP	6.4	5.0	4.9	5.3	5.0	4.7	6.0	5.0	4.5	6.1	5.0	
SINGLE-YARN STRENGTH TEST:	134	133	115	119	110	104	124	121	113	149	135	
Tenacity (mN/tex)	10.9	14.1	18.1	10.0	12.8	17.4	11.3	14.5	16.9	13.7	13.0	
CV% of Tenacity	3.60	2.18	1.36	3.18	1.80	1.23	3.33	1.99	1.33	3.83	2.22	
Force (N)	6.68	5.87	5.11	5.96	5.27	5.00	6.37	5.57	5.18	6.27	5.84	
Elongation (%)	11.8	12.4	14.1	10.0	12.9	14.5	10.8	13.1	14.7	13.1	12.6	
CV% of Elongation	0.97	0.54	0.31	0.79	0.42	0.28	0.89	0.51	0.30	1.02	0.54	
Specific Work to Rupture (cm*N)	16.4	20.1	24.8	14.0	19.5	24.7	15.2	19.6	23.1	19.9	18.2	
CV% of Specific Work to Rupture												
USTER YARN EVENNESS TEST:	22.8	26.4	28.9	23.3	28.7	30.2	23.4	29.0	31.1	23.5	27.5	
Non-Uniformity (CV%)	1859	2844	3493	2055	3465	3780	2074	3590	3936	2122	3227	
Thick Places/1,000 yd	513	1295	2027	568	2051	2413	603	2060	2352	481	1067	
Thin Places/1,000 yd	422	1002	1587	309	1437	2004	299	1493	2053	567	1507	
YARN APPEARANCE INDEX	80	70	60	90	70	60	70	70	60	90	60	

* Cotton stuck to processing rolls (card and roving).

Fiber and Processing Tests of Leading Cotton Varieties - 1993 Cotton Crop - Fiber Properties.

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	PIMA S-7	
	FAR WEST	
CLASSIFICATION	Arizona	California
HVI - SPINLAB		
Classer's Grade (code)	3	2
HVI Staple (code)	46	46
UHM (in)	1.35	1.33
Uniformity Index (%)	87.0	86.8
Strength (g/tex)	44.4	44.5
Elongation (%)	-	-
Micronaire (rdg)	4.1	3.9
Color Rd (%)	65.1	64.1
Color +b (units)	11.6	12.3
STELLOMETER		
1/8" - Gage Strength (g/tex)*	40.2	42.7
Elongation (%)	6.1	6.3
SUTER-WEBB LENGTH ARRAY		
UQL (in)	1.54	1.53
Mean Length (in)	1.27	1.28
CV (%)	28.6	27.0
Short Fiber Content (%)	5.0	4.2
IIC/SHIRLEY FMT		
Fineness (mtex)	140.0	134.8
Maturity Ratio	1.119	1.085
S. A. NON-LINT CONTENT		
Visible Waste (%)	1.9	2.1
Total Waste (%)	3.1	3.2
NEPS OF RAW COTTON		
AFIS-N (neps/gram)	100	99
Raw Stock Neps (neps/100 sq. in.)	27	18
SUGAR CONTENT (%)	0.24	0.23

*Stelometer results adjusted to Pressley level.

		PIMA S-7					
		Arizona		FAR WEST			
		22s	36s	50s	22s	36s	50s
OPENING & CARDING WASTE (%):		7.17	7.17	7.17	5.71	5.71	5.71
COMBING WASTE(%):		16.54	16.54	16.54	15.57	15.57	15.57
YARN SKEIN STRENGTH TEST:							
Yarn Number (Ne)	23.3	36.1	50.5	22.4	36.1	50.7	
CV% of Yarn Number	2.6	2.8	1.8	1.9	2.0	2.8	
Count-Strength-Product	4416	4015	3861	4522	3975	3860	
CV% of CSP	1.9	2.8	3.9	3.6	4.9	4.4	
Elongation (%)	6.5	5.4	5.2	7.0	5.5	5.4	
SINGLE-YARN STRENGTH TEST:							
Tenacity (mN/tex)	243	244	231	260	242	228	
CV% of Tenacity	8.8	10.0	11.7	8.7	11.5	11.8	
Force (N)	6.52	3.99	2.73	6.97	3.97	2.70	
Elongation (%)	6.49	6.12	5.67	6.96	6.21	5.70	
CV% of Elongation	8.2	9.1	7.6	13.2	8.7	7.3	
Specific Work to Rupture (cm*N)	1.65	0.93	0.63	1.74	0.93	0.60	
CV% of Specific Work to Rupture	11.3	13.9	15.0	12.8	15.3	15.6	
USTER YARN EVENNESS TEST:							
Non-Uniformity (CV%)	11.5	15.4	21.0	11.3	14.4	16.8	
Thick Places/1,000 yd	18	163	778	17	100	266	
Thin Places/1,000 yd	0	96	864	2	16	113	
Neps/1,000 yd	10	69	189	7	43	112	
YARN APPEARANCE INDEX	130	120	100	130	120	110	

* Cotton stuck to processing rolls (card and roving).

Standard Machine Settings and Specifications for Processing Specified Groups of Cotton.

CARD	Process	U.S.UPLAND	U.S. UPLAND (COMBED)	AMERICAN PIMA
Standard Atmospheric Conditions				
Temperature (degrees F)		75	75	75
Relative Humidity (pct.)		55	55	55
Sliver Delivered (gr./yd.)		60	60	60
Production Rate Per Hour (lbs.)		70	70	70
Doffer Speed (f.p.m.)		42	42	42
Cylinder Speed (f.p.m.)		365	365	365
Flat Speed (f.p.m.)		8.5	8.5	8.5
Licker-In Speed (in. / min.)		942	942	942
Settings:				
Feed Plate to Licker-In (in.)		.008	.008	.008
Mote Knife to Licker-In (in.)		.012	.012	.012
Licker-In Screen to Cylinder (in.)		.007	.007	.007
Back Cylinder Screen , Top (in.)		.023	.023	.023
Back Cylinder Screen , Bottom (in.)		.038	.038	.038
Front Cylinder Screen , Top (in.)		.120	.120	.120
Front Cylinder Screen , Bottom (in.)		.036	.036	.036
Flats, Back (in.)		.012	.012	.012
Flats, Mid (in.)		.010	.010	.010
Flats, Front (in.)		.009	.009	.009
Flats Stationary Back (3) (in.)		.010	.010	.010
Flats Stationary Front (3) (in.)		.010	.010	.010
Front Knife, Top (in.)		.010	.010	.010
Front Knife, Bottom (in.)		.010	.010	.010
Back Knife (in.)		.050	.050	.050
Top Front Plate to Cylinder (in.)		.040	.040	.040
Doffer to Cylinder (in.)		.004	.004	.004
Doffer to Stripper Roll (in.)		.005	.005	.005
Stripper to Crush Rolls (in.)		.008	.008	.008
Crusher Roll Pressure (lbs.)		112	112	112

Standard Machine Settings and Specifications for Processing Specified Groups of Cotton.

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Process	U.S. Upland	U.S. Upland (Combed)	American Pima
Standard Atmospheric Conditions			
Temperature (degrees F.)	75	75	75
Relative Humidity (pct.)	55	55	55
Sliver Lapper (Combed Only)			
Sliver Fed, 20 Each. (gr./yd.)	-	42	42
Lap Delivered (gr./yd.)	-	808	808
Speed (yd./min.)	-	46	46
Comber (Model 52)			
Sliver Delivered (gr./yd.)	-	50	40
Production Per Hour (lbs.)	-	22	22
Nominal Waste (pct.)	-	16 to 17	16 to 17
Breaker Drawing Frame (3 over 3)			
Sliver Fed (6 Each) (gr. /yd.)	60	60	60
Sliver Delivered (gr. /yd.)	53	53	53
Roll Settings:			
First to Second (mm.)	36	36	39
Second to Third (mm.)	40	40	42
Speed (meters / min.)	350	350	350
Finisher Drawing Frame (3 over 4)			
Sliver Fed (8 Each) (gr. /yd.)	53	53	53
Sliver Delivered (gr. /yd.)	55	55	55
Roll Settings:			
First to Third (in.)	2-9/16	2-9/16	2-5/8
Third to Fourth (in.)	1-1/2	1-1/2	1-7/8
Speed (feet / min.)	524	524	315

Standard Machine Settings and Specifications for Processing Specified Groups of Cotton.

Process	U.S. Upland	U.S. Upland (Combed)	American Pima
Long Draft Roving (10 X 5, 1-Apron Type)			
Standard Atmospheric Conditions:			
Temperature (degrees F.)	75	75	75
Relative Humidity (pct.)	60	60	60
Silver Fed (gr. / yd.)	55	55	55
Roving Delivered (hank)	0.80, 1.00, 1.25	0.80, 1.00, 1.25	0.80, 1.00, 1.25
Roll Settings:			
First to Second (in.)	2-3/32	2-3/32	2-1/4
Second to Third (in.)	1-1/2	1-1/2	2
Spindle Speed (r.p.m.)	900	900	900
Long Draft Spinning (2-Apron Type)			
Standard Atmospheric Conditions:			
Temperature (degrees F.)	75	75	75
Relative Humidity (pct.)	65	65	65
Twist Multiplier (no.)	4.00	4.00	4.00
Carded Yarns (no.)	22, 36, 50	-	-
Combed Yarns (no.)	-	22, 36, 50	22, 36, 50
Roll Settings:			
First to Second (in.)	1-11/16	1-11/16	1-11/16
Second to Third (in.)	1-13/16	1-13/16	2
Spindle Speed (r.p.m.)	11,000	11,000	11,000
Open-End Spinning			
Standard Atmospheric Conditions:			
Temperature (degrees F.)	75	-	-
Relative Humidity (pct.)	65	-	-
Silver Fed (gr. / yd.)	55	-	-
Twist Multiplier (no.)	4.80	-	-
Carded Yarns (no.)	10, 22, 30	-	-
Rotor Speed (r.p.m.)	90,000	-	-
Rotor Diameter (mm.)	T33	-	-
Opening Roll Speed (r.p.m.)	7,500	-	-

OUTLINE OF MECHANICAL PROCESSES



